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IDENTIFIERS New York

ABSTRACT

This document provides items to assess student competencies in the mathematics skills which need to be mastered as a requisite to passing the Test of General Educational Development (GED). The items are tailored to the skills outlined in the taxonomy; two items are given for each of the 74 topics. Two multiple-choice response sheets are included, plus an outline of the mathematical skills tested. (MS)

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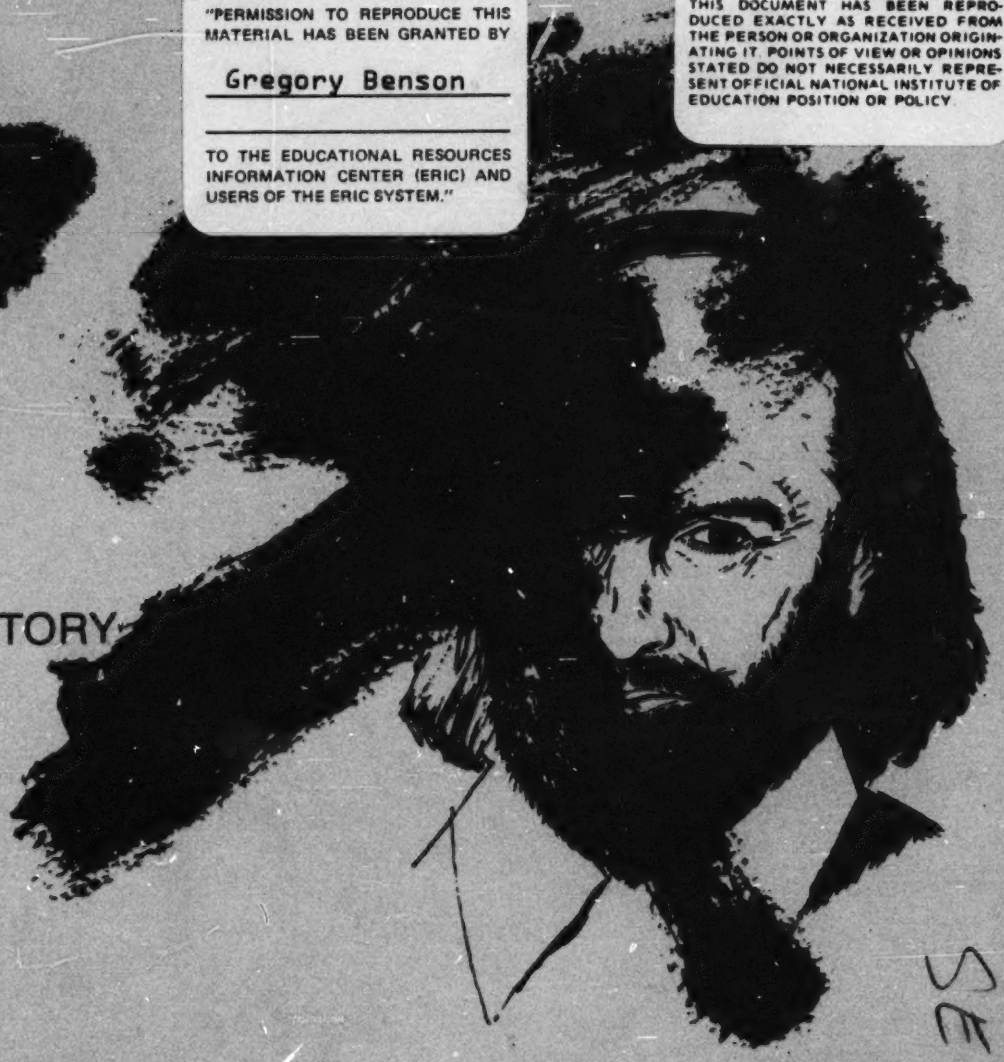
A TAXONOMY OF SELECTED HIGH SCHOOL EQUIVALENCY MATERIALS



MATHEMATICS

SUPPLEMENTARY INVENTORY

THE UNIVERSITY OF THE STATE OF NEW YORK/THE STATE EDUCATION DEPARTMENT
ALBANY, NEW YORK 12234

THE UNIVERSITY OF THE STATE OF NEW YORK

Regents of The University (with years when terms expire)

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1987 Carl H. Pforzheimer, Jr., A.B., M.B.A., D.C.S., H.H.D., Vice Chancellor - - - - - - - - - - - - - - - - - - - Purchase
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1983 Mary Alice Kendall, B.S. - - - - - - - - - - - - - - - - Irondequoit
1984 Jorge L. Batista, B.S., J.D., LL.D.- - - - - - - - - - - Bronx
1982 Louis E. Yavner, LL.B. - - - - - - - - - - - - - - - - - New York
1979 Laura B. Chodos, B.A. M.A. - - - - - - - - - - - - - - - Clifton Park
1980 Martin C. Barell, B.A., I.A., LL.B. - - - - - - - - - - Kings Point
1981 Joseph R. Bongiorno, B.S., M.D. - - - - - - - - - - - - Brooklyn
1984 Louise P. Matteoni, B.A., M.A., Ph.D. - - - - - - - - - Bayside
1981 J. Edward Meyer, B.A. LL.B. - - - - - - - - - - - - - - Chappaqua

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FOREWORD

In A Taxonomy of Selected High School Equivalency Materials - Mathematics, which was distributed in the spring of 1976, the California Achievement Test, Level 4, Form A, was recommended as an instrument which could be used to profile a student's competencies in the mathematics skills which need to be mastered as a requisite to passing the Test of General Educational Development. However, the C.A.T. was really not designed specifically for this purpose. While it tests for most of the skills which are on the G.E.D., it fails to test in several critical areas. The C.A.T. was recommended though because, of all the instruments available at the time, there existed about an 85 percent correlation between the skills it assessed and the skills which needed to be mastered by a high school equivalency student.

The recommendation to use the C.A.T. was only an expediency in that it was felt that the development and distribution of the taxonomy should not be delayed by the time-consuming task of constructing an assessment instrument. This supplement, tailored specifically, item by item, to the skills outlined in the taxonomy now provides the high school equivalency instructor with two problems with which to assess each skill. It will be noted that there is an even and an odd numbered problem for each skill. Approximately an hour's testing time is recommended for 74 problems. If the full 148 problems are administered, the student should be given a 15 minute break after completing the first 74 problems.

For ease of scoring, the students should record their answers on copies of the multiple choice response sheets found on the front and back of cards 3 and 4. The correct answers are circled on the answer sheets found on the front and back of cards 5 and 6. By punching out the circles, the teacher will have a convenient scoring mask. An alternative is to prepare a transparency of the scoring sheets by using a heat transfer process.

Peter M. Ceballos of the Adult Learning Center, Albany, constructed the inventory which was reviewed and prepared for publication by George K. Tregaskis, associate, Bureau of General Education Curriculum Development. Joseph A. Mangano, who recently retired as Chief of the Bureau of General Continuing Education, and Frederic Paul, Chief, Bureau of Mathematics contributed helpful suggestions during the initial planning stages of this publication. Theodore Turone, associate, Bureau of General Continuing Education provided advice on its implementation through regional workshops.

OUTLINE OF CRITICAL HIGH SCHOOL EQUIVALENCY MATHEMATICAL SKILLS

I. Fundamental operations
- A. Whole numbers
  1. Adding whole numbers (cd 1).
  2. Subtracting whole numbers (cd 2).
  3. Multiplying whole numbers (cd 3).
  4. Dividing whole numbers (cd 4).
- B. Fractions
  1. Kinds of fractions
     a. Recognizing proper fractions (cd 5).
     b. Recognizing improper fractions (cd 6).
     c. Recognizing mixed fractions (cd 7).
  2. Operations with fractions
     a. Reducing fractions (cd 8).
     b. Finding common denominators (cd 9).
     c. Adding fractions (cd 10).
     d. Subtracting fractions (cd 11).
     e. Multiplying fractions (cd 12).
     f. Dividing fractions (cd 13).
  3. Solving word problems involving fractions (cd 14).
- C. Decimals
  1. Reading and writing decimals (cd 15).
  2. Rounding off decimals (cd 16).
  3. Adding decimals (cd 17).
  4. Subtracting decimals (cd 18).
  5. Multiplying decimals (cd 19).
  6. Dividing decimals (cd 20).
  7. Converting fractions to decimals (cd 21).
  8. Solving problems involving decimals (cd 22).
- D. Percents
  1. Defining meaning of percent (cd 23).
  2. Converting percents to fractions (cd 24).
  3. Converting percents to decimals (25).
  4. Performing operations with percents
     a. Finding percent of a number (cd 26).
     b. Finding what percent one number is of another (cd 27).
     c. Finding a number given its percent (cd 28).
  5. Solving word problems involving percents
     a. Solving general word problems involving percent (cd 29).
     b. Determining discount (cd 30).
     c. Determining commission (cd 31).
     d. Determining interest (cd 32).
  6. Interpreting circle graphs (cd 33).
- E. Ratio and proportion
  1. Defining ratio (cd 34).
  2. Expressing ratio (cd 35).
  3. Defining proportions (cd 36).
  4. Operations with proportions
     a. Solving proportions (cd 37).
     b. Solving similar polygon problems (cd 38).
- F. Properties of numbers
  1. Defining prime numbers (cd 39).
  2. Finding prime factors (cd 40).
  3. Finding square roots (cd 41).
  4. Adding signed numbers (cd 42).
  5. Subtracting signed numbers (cd 43).
  6. Multiplying signed numbers (cd 44).
  7. Dividing signed numbers (cd 45).

II. New Math
- A. Defining sets (cd 46).
- B. Operations with sets
  1. Finding the intersection of a set (cd 47).
  2. Finding the union of a set (cd 48).

III. Algebra
- A. Simple equations
  1. Recognizing the symbols of equality and inequality (cd 49).
  2. Solving equations and inequalities (cd 50).
- B. Evaluation of algebraic expressions and formulas
  1. Evaluating expressions (cd 51).
  2. Evaluating expressions with exponents (cd 52).
  3. Using parentheses (cd 53).
  4. Using algebraic formulas (cd 54).
- C. Verbal problems
  1. Writing sentences as equations (cd 55).
  2. Solving verbal problems (cd 56).
- D. Monomials and polynomials
  1. Operations with monomials
     a. Adding and subtracting monomials (cd 57).
     b. Multiplying and dividing monomials (cd 58).
  2. Operations with polynomials
     a. Adding and subtracting polynomials (cd 59).
     b. Multiplying and dividing polynomials (cd 60).
- E. Factoring
  1. Factoring polynomials (cd 61).
  2. Factoring the difference of two perfect squares (cd 62).
  3. Factoring quadratic expressions (cd 63).
- F. Solving simultaneous equations (cd 64).
- G. Measurement
  1. Understanding types of measurements (cd 65).
  2. Converting unit measurements within a system (cd 66).
  3. Applying formulas
     a. Finding area (cd 67).
     b. Finding volume (cd 68).
  4. Interpreting graphs
     a. Understanding types of graphs (cd 69).
     b. Interpreting graphs (cd 70).

IV. Geometry
- A. Defining types of angles (cd 71).
- B. Defining types of triangles (cd 72).
- C. Solving problems with the Pythagorean Theorem (cd 73).
- D. Graphing equations (cd 74).

Name _____

Put an X on the correct answer

Adding whole numbers (od 1)
1. A B C D E 2. A B C D E

Subtracting whole numbers (od 2)
3. A B C D E 4. A B C D E

Multiplying whole numbers (od 3)
5. A B C D E 6. A B C D E

Dividing whole numbers (od 4)
7. A B C D E 8. A B C D E

Recognizing proper fractions (od 5)
9. A B C D E 10. A B C D E

Recognizing improper fractions (od 6)
11. A B C D E 12. A B C D E

Recognizing mixed fractions (od 7)
13. A B C D E 14. A B C D E

Reducing fractions (od 8)
15. A B C D E 16. A B C D E

Finding common denominators (od 9)
17. A B C D E 18. A B C D E

Adding fractions (od 10)
19. A B C D E 20. A B C D E

Subtracting fractions (od 11)
21. A B C D E 22. A B C D E

Multiplying fractions (od 12)
23. A B C D E 24. A B C D E

Dividing fractions (od 13)
25. A B C D E 26. A B C D E

Solving word problems involving fractions (od 14)
27. A B C D E 28. A B C D E

Reading and writing decimals (od 15)
29. A B C D E 30. A B C D E

Rounding off decimals (od 16)
31. A B C D E 32. A B C D E

Adding decimals (od 17)
33. A B C D E 34. A B C D E

Subtracting decimals (od 18)
35. A B C D E 36. A B C D E

Multiplying decimals (od 19)
37. A B C D E 38. A B C D E

Dividing decimals (od 20)
39. A B C D E 40. A B C D E

Name _____

Put an X on the correct answer

Converting fractions to decimals (cd 21)
41. A B C D E 42. A B C D E

Solving problems involving decimals (cd 22).
43. A B C D E 44. A B C D E

Defining meaning of percent (cd 23)
45. A B C D E 46. A B C D E

Converting percents to fractions (cd 24)
47. A B C D E 48. A B C D E

Converting percents to decimals (cd 25)
49. A B C D E 50. A B C D E

Finding percent of a number (cd 26)
51. A B C D E 52. A B C D E

Finding what percent one number is of another (cd 27)
53. A B C D E 54. A B C D E

Finding a number given its percent (cd 28)
55. A B C D E 56. A B C D E

Solving general word problems involving percent (cd 29)
57. A B C D E 58. A B C D E

Determining discount (cd 30)
59. A B C D E 60. A B C D E

Determining commission (cd 31)
61. A B C D E 62. A B C D E

Determining interest (cd 32)
63. A B C D E 64. A B C D E

Interpreting circle graphs (cd 33)

65.	66.
1. A B C D E	1. A B C D E
2. A B C D E	2. A B C D E
3. A B C D E	3. A B C D E

Defining ratio (cd 34)
67. A B C D E 68. A B C D E

Expressing ratio (cd 35)
69 . A B C D E 70. A B C D E

Defining proportions (cd 36)
71. A B C D E 72. A B C D E

Solving proportions (cd 37)
73. A B C D E 74. A B C D E

Solving similar polygon problems (cd 38)
75. A B C D E 76. A B C D E

Defining prime numbers (cd 39)
77. A B C D E 78. A B C D E

Finding prime factors (cd 40)
79. A B C D E 80. A B C D E

Name _____ Put an X on the correct answer

Finding square roots (od 41)
81. A B C D E 82. A B C D E

Adding signed numbers (od 42)
83. A B C D E 84. A B C D E

Subtracting signed numbers (od 43)
85. A B C D E 86. A B C D E

Multiplying signed numbers (od 44)
87. A B C D E 88. A B C D E

Dividing signed numbers (od 45)
89. A B C D E 90. A B C D E

Defining sets (od 46)
91. A B C D E 92. A B C D E

Finding the intersection of a set (od 47)
93. A B C D E 94. A B C D E

Finding the union of a set (od 48)
95. A B C D E 96. A B C D E

Recognizing the symbols of = and ≠ (od 49)
97. A B C D E 98. A B C D E

Solving equations and inequalities (od 50)
99. A B C D E 100. A B C D E

Evaluating expressions (od 51)
101. A B C D E 102. A B C D E

Evaluating expressions with exponents (od 52)
103. A B C D E 104. A B C D E

Using parentheses (od 53)
105. A B C D E 106. A B C D E

Using algebraic formulas (od 54)
107. A B C D E 108. A B C D E

Writing sentences as equations (od 55)
109. A B C D E 110. A B C D E

Solving verbal problems (od 56)
111. A B C D E 112. A B C D E

Adding and subtracting monomials (od 57)
113. A B C D E 114. A B C D E

Multiplying and dividing monomials (od 58)
115. A B C D E 116. A B C D E

Adding and subtracting polynomials (od 59)
117. A B C D E 118. A B C D E

Multiplying and dividing polynomials (od 60)
119. A B C D E 120. A B C D E

Name _____

Put an X on the correct answer

Factoring polynomials (cd 61)
121. A B C D E 122. A B C D E

Factoring the difference of two perfect squares (cd 62)
123. A B C D E 124. A B C D E

Factoring quadratic expressions (cd 63)
125. A B C D E 126. A B C D E

Solving simultaneous equations (cd 64)
127. A B C D E 128. A B C D E

Understanding types of measurements (cd 65)
129. A B C D E 130. A B C D E

Converting unit measurements within a system (cd 66)
131. A B C D E 132. A B C D E

Finding area (cd 67)
133. A B C D E 134. A B C D E

Finding volume (cd 68)
135. A B C D E 136. A B C D E

Understanding types of graphs (cd 69)
137. A B C D E 138. A B C D E

Interpreting graphs (cd 70)
139.
1. A B C D E
2. A B C D E
3. A B C D E

140.
1. A B C D E
2. A B C D E
3. A B C D E

Defining types of angles (cd 71)
141. A B C D E 142. A B C D E

Defining types of triangles (cd 72)
143. A B C D E 144. A B C D E

Solving problems with the Pythagorean Theorem (cd 73)
145. A B C D E 146. A B C D E

Graphing equations (cd 74)
147. A B C D E 148. A B C D E

Name _____

Put an X on the correct answer

Adding whole numbers (od 1)
1. A B (C) D E 2. (A) B C D E

Subtracting whole numbers (od 2)
3. A B C (D) E 4. A B C (D) E

Multiplying whole numbers (od 3)
5. A (B) C D E 6. A B C (D) E

Dividing whole numbers (od 4)
7. A B (C) D E 8. (A) B C D E

Recognizing proper fractions (od 5)
9. A B (C) D E 10. A B (C) D E

Recognizing improper fractions (od 6)
11. A (B) C D E 12. A B (C) D E

Recognizing mixed fractions (od 7)
13. (A) B C D E 14. A (B) C D E

Reducing fractions (od 8)
15. A B C (D) E 16. A (B) C D E

Finding common denominators (od 9)
17. A (B) C D E 18. A B C (D) E

Adding fractions (od 10)
19. A B C (D) E 20. (A) B C D E

Subtracting fractions (od 11)
21. A B (C) D E 22. (A) B C D E

Multiplying fractions (od 12)
23. A B (C) D E 24. A (B) C D E

Dividing fractions (od 13)
25. (A) B C D E 26. A B (C) D E

Solving word problems involving fractions (od 14)
27. A (B) C D E 28. (A) B C D E

Reading and writing decimals (od 15)
29. (A) B C D E 30. (A) B C D E

Rounding off decimals (od 16)
31. (A) B C D E 32. A B C (D) E

Adding decimals (od 17)
33. A B C (D) E 34. A (B) C D E

Subtracting decimals (od 18)
35. A (B) C D E 36. (A) B C D E

Multiplying decimals (od 19)
37. A (B) C D E 38. A B (C) D E

Dividing decimals (od 20)
39. (A) B C D E 40. (A) B C D E

Name _____

Put an X on the correct answer

Converting fractions to decimals (cd 21)
41. A (B) C D E 42. A B (C) D E

Solving problems involving decimals (cd 22).
43. A (B) C D E 44. A B (C) D E

Defining meaning of percent (cd 23)
45. A (B) C D E 46. A B C D (E)

Converting percents to fractions (cd 24)
47. A (B) C D E 48. A B C (D) E

Converting percents to decimals (cd 25)
49. A B C (D) E 50. A B (C) D E

Finding percent of a number (cd 26)
51. A (B) C D E 52. A (B) C D E

Finding what percent one number is of another (cd 27)
53. A B (C) D E 54. A B C (D) E

Finding a number given its percent (cd 28)
55. A B (C) D E 56. A B C (D) E

Solving general word problems involving percent (cd 29)
57. (A) B C D E 58. A (B) C D E

Determining discount (cd 30)
59. A B C (D) E 60. A B (C) D E

Determining commission (cd 31)
61. (A) B C D E 62. A B C (D) E

Determining interest (cd 32)
63. A B C (D) E 64. A (B) C D E

Interpreting circle graphs (cd 33)

65.
1. (A) B C D E
2. A B C (D) E
3. A B (C) D E

66.
1. A B C (D) E
2. (A) B C D E
3. A (B) C D E

Defining ratio (cd 34)
67. A (B) C D E 68. A B (C) D E

Expressing ratio (cd 35)
69. A B C (D) E 70. A (B) C D E

Defining proportions (cd 36)
71. (A) B C D E 72. (A) B C D E

Solving proportions (cd 37)
73. A B (C) D E 74. A B C (D) E

Solving similar polygon problems (cd 38)
75. A B C (D) E 76. A (B) C D E

Defining prime numbers (cd 39)
77. A (B) C D E 78. A B (C) D E

Finding prime factors (cd 40)
79. A B (C) D E 80. A B C (D) E

Name

Put an X on the correct answer

Finding square roots (od 41)
81. A B (C) D E 82. (A) B C D E

Adding signed numbers (od 42)
83. A B C (D) E 84. A B C D (E)

Subtracting signed numbers (od 43)
85. A B (C) D E 86. A B (C) D E

Multiplying signed numbers (od 44)
87. (A) B C D E 88. A B C (D) E

Dividing signed numbers (od 45)
89. A B (C) D E 90. (A) B C D E

Defining sets (od 46)
91. A B C D (E) 92. A B (C) D E

Finding the intersection of a set (od 47)
93. A B (C) D E 94. A B (C) D E

Finding the union of a set (od 48)
95. (A) B C D E 96. (A) B C D E

Recognizing the symbols of = and ≠ (od 49)
97. A B C (D) E 98. (A) B C D E

Solving equations and inequalities (od 50)
99. A (B) C D E 100. (A) B C D E

Evaluating expressions (od 51)
101. A B C (D) E 102. A B C (D) E

Evaluating expressions with exponents (od 52)
103. A B C (D) E 104. A (B) C D E

Using parentheses (od 53)
105. (A) B C D E 106. (A) B C D E

Using algebraic formulas (od 54)
107. (A) B C D E 108. A B C (D) E

Writing sentences as equations (od 55)
109. A (B) C D E 110. A B (C) D E

Solving verbal problems (od 56)
111. A B (C) D E 112. A B C (D) E

Adding and subtracting monomials (od 57)
113. A B (C) D E 114. (A) B C D E

Multiplying and dividing monomials (od 58)
115. A B C (D) E 116. (A) B C D E

Adding and subtracting polynomials (od 59)
117. A B C (D) E 118. A (B) C D E

Multiplying and dividing polynomials (od 60)
119. A (B) C D E 120. (A) B C D E

Name _____

Put an X on the correct answer

Factoring polynomials (cd 61)
121. A B C (D) E 122. A (B) C D E

Factoring the difference of two perfect squares (cd 62)
123. A B C (D) E 124. A (B) C D E

Factoring quadratic expressions (cd 63)
125. A (B) C D E 126. A (B) C D E

Solving simultaneous equations (cd 64)
127. A B C (D) E 128. A B C (D) E

Understanding types of measurements (cd 65)
129. A B (C) D E 130. A B (C) D E

Converting unit measurements within a system (cd 66)
131. A B (C) D E 132. (A) B C D E

Finding area (cd 67)
133. A (B) C D E 134. A (B) C D E

Finding volume (cd 68)
135. A (B) C D E 136. A (B) C D E

Understanding types of graphs (cd 69)
137. A B (C) D E 138. A B (C) D E

Interpreting graphs (cd 70)
139.
1. A (B) C D E
2. A B (C) D E
3. A B (C) D E

140.
1. (A) B C D E
2. (A) B C D E
3. A (B) C D E

Defining types of angles (cd 71)
141. A (B) C D E 142. A (B) C D E

Defining types of triangles (cd 72)
143. A B C (D) E 144. A B C (D) E

Solving problems with the Pythagorean Theorem (cd 73)
145. A (B) C D E 146. A B (C) D E

Graphing equations (cd 74)
147. (A) B C D E 148. (A) B C D E

1)

$$\begin{array}{r} 73904 \\ 92561 \\ +\ 80437 \\ \hline \end{array}$$

A. 246,992
B. 236,902
C. 246,902
D. 246,402

2)

$$\begin{array}{r} 37493 \\ 20871 \\ 87351 \\ +\ 50320 \\ \hline \end{array}$$

A. 196,035
B. 196,045
C. 195,035
D. 185,035

3)

$$\begin{array}{r} 74903 \\ -\ 69972 \\ \hline \end{array}$$

A. 5031
B. 14,931
C. 4031
D. 4931

4)

$$\begin{array}{r} \$1014.93 \\ -\ 932.94 \\ \hline \end{array}$$

A. $81.88
B. $81.09
C. $80.99
D. $81.99

5)

$$\begin{array}{r} 74937 \\ \times\ 304 \\ \hline \end{array}$$

A. 2,278,848
B. 22,780,848
C. 20,278,848
D. 524,559

6)

$$\begin{array}{r} 940731 \\ \times\ 409 \\ \hline \end{array}$$

A. 46,095,819
B. 12,229,503
C. 384,458,979
D. 384,758,979

7) $293\overline{)164080}$

A. 807
B. 128
C. 560
D. 562

8) $20\overline{)\$19,706.80}$

A. $985.34
B. $9853.40
C. $985.30
D. $895.43

9) Which of the following pairs of fractions are both proper fractions?

A. $\frac{21}{7}$, $\frac{24}{25}$

B. $\frac{8}{1}$, $\frac{21}{7}$

C. $\frac{1}{8}$, $\frac{24}{25}$

D. $\frac{1}{8}$, $\frac{17}{17}$

10) In which of the following pairs of fractions do both represent something other than proper fractions?

A. $\frac{7}{8}$, $\frac{6}{100}$

B. $1\frac{1}{2}$, $\frac{7}{8}$

C. $\frac{11}{10}$, $1\frac{1}{2}$

D. $\frac{8}{100}$, $\frac{11}{10}$

11) Which of the following pairs of fractions are both improper fractions?

A. $\frac{4}{9}$, $\frac{12}{9}$

B. $\frac{12}{9}$, $\frac{7}{7}$

C. $\frac{17}{18}$, $\frac{7}{7}$

D. $\frac{1}{12}$, $7\frac{4}{9}$

12) In which of the following pairs of fractions do both represent something other than improper fractions?

A. $\frac{1}{10}$, $\frac{12}{12}$

B. $\frac{1}{10}$, $\frac{80}{2}$

C. $\frac{1}{10}$, $\frac{14}{15}$

D. $\frac{12}{12}$, $\frac{7}{9}$

13) Which of the following pairs of numbers are both mixed numbers?

A. $7\frac{4}{5}$, $2\frac{1}{2}$

B. $2\frac{1}{2}$, $\frac{1}{3}$

C. $7\frac{4}{5}$, $\frac{14}{2}$

D. $\frac{1}{3}$, $\frac{25}{26}$

14) Which of the following pairs of numbers both represent something other than mixed numbers?

A. $7\frac{1}{2}$, $\frac{2}{3}$

B. $\frac{2}{3}$, $\frac{8}{8}$

C. $\frac{21}{1}$, $1\frac{1}{8}$

D. $6\frac{5}{4}$, $\frac{5}{4}$

15) Reduce to the lowest terms:

$$\frac{125}{750}$$

A. 6

B. $6\frac{1}{6}$

C. $\frac{1}{12}$

D. $\frac{1}{6}$

16) Reduce the following fraction to its lowest terms:

$$\frac{81}{8}$$

A. 9

B. $10\frac{1}{8}$

C. $9\frac{1}{8}$

D. 10.8

17) What is the lowest common denominator for the fractions $\frac{1}{6}, \frac{7}{36}, \frac{8}{12}, \frac{5}{24}$?

A. 24
B. 72
C. 144
D. 96

18) What is the lowest common denominator for the fractions $\frac{7}{8}, \frac{2}{3}, \frac{3}{12}, \frac{1}{2}$?

A. 12
B. 36
C. 48
D. 24

19) Add:

$$\begin{array}{r} 10\frac{10}{12} \\ 7\frac{1}{2} \\ +\ 12\frac{2}{3} \\ \hline \end{array}$$

A. $32\frac{1}{6}$
B. 30
C. 29
D. 31

20) Add:

$$\begin{array}{r} 4\frac{3}{4} \\ 9\frac{2}{3} \\ +\ 1\frac{7}{9} \\ \hline \end{array}$$

A. $16\frac{7}{36}$
B. $15\frac{19}{36}$
C. $17\frac{1}{2}$
D. $14\frac{12}{16}$

21) Subtract: $12\frac{6}{11} - 3\frac{2}{3}$

A. $9\frac{4}{3}$

B. $8\frac{7}{21}$

C. $8\frac{29}{33}$

D. $15\frac{8}{33}$

22) Subtract: $18\frac{7}{8} - 4\frac{7}{9}$

A. $14\frac{7}{72}$

B. $13\frac{7}{72}$

C. $14\frac{14}{17}$

D. $14\frac{1}{8}$

23) $7\frac{1}{8} \times 12\frac{1}{2} =$

A. $89\frac{3}{16}$

B. $84\frac{14}{16}$

C. $89\frac{1}{16}$

D. $19\frac{5}{8}$

24) $\frac{2}{3} \times \frac{12}{15} \times 2\frac{3}{9} =$

A. $\frac{99}{135}$

B. $1\frac{11}{45}$

C. $2\frac{8}{27}$

D. $1\frac{8}{45}$

25) $16\frac{2}{3} \div 4\frac{3}{8} =$

A. $3\frac{17}{21}$

B. $3\frac{7}{21}$

C. $3\frac{14}{21}$

D. $4\frac{3}{16}$

26) $7\frac{11}{15} \div 8 =$

A. $1\frac{6}{15}$

B. $56\frac{11}{15}$

C. $\frac{29}{30}$

D. $\frac{22}{30}$

27) A man cut 2 pieces of pipe from a 15 foot piece. One piece was $3\frac{5}{7}$ feet long and the other was $7\frac{2}{3}$ feet long. How much pipe was left from the original piece?

A. $\frac{16}{21}$ ft.

B. $3\frac{16}{21}$ ft.

C. $5\frac{2}{3}$ ft.

D. $4\frac{13}{21}$ ft.

28) A pipe $17\frac{2}{3}$ feet was cut into pieces $3\frac{1}{2}$ feet long. How many $3\frac{1}{2}$ feet long pieces were there and what fraction of a foot was left?

A. 5, $\frac{1}{6}$

B. 6, 0

C. 4, $\frac{5}{6}$

D. 5, $\frac{2}{3}$

29) Which of the following expresses, in words, the decimal 102.001?

A. One hundred two and one thousandth.
B. One hundred two and one hundred and three ten-thousandths.
C. One hundred two and one hundred three thousandths.
D. One hundred and two and one hundred and three hundredths.
E. None of the above.

30) Which of the following, expresses in words, the decimal 780.021?

A. Seven hundred eighty and twenty one thousandths.
B. Seven hundred and eighty and two thousand one hundred thirty thousandths.
C. Seven hundred eighty and two thousand one hundred thirty hundredths.
D. Seven hundred eighty and two hundred thirteen thousandths.
E. None of the above.

31) Round off 104.08092 to the nearest thousandth.

A. 104.081
B. 104.089
C. 104.090
D. 104.809

32) Round off 212.4950 to the nearest whole number.

A. 212.49
B. 212.50
C. 213.
D. 212.

33) 33.2 + 0.84 + 7.01 + 123.205 =

A. 1243.22
B. 164.259
C. 163.255
D. 164.255

34) 12.01 + 3.1 + 70.24 + 127.001 =

A. 312.351
B. 212.351
C. 212.352
D. 202.351

35) 429.899 - 379.902 =

A. 59.997
B. 49.997
C. 50.997
D. 499.97

36) 409.0025 - 397.9475 =

A. 11.055
B. 110.550
C. 10.055
D. 9.550

37)
Find the product:

$$\begin{array}{r} 14.287 \\ \times \quad 6.3 \\ \hline \end{array}$$

A. 910081
B. 90.0081
C. 910.081
D. 90.81

38)
Find the product:

$$\begin{array}{r} 257.03 \\ \times \quad .73 \\ \hline \end{array}$$

A. 187.6901
B. 18.63
C. 187.6319
D. 18.8319

39)
Find the quotient:

$$2.9\overline{)\,2056.1}$$

A. 709
B. 7.09
C. 70.9
D. 1074

40)
Find the quotient:

$$7.08\overline{)\,2.5488}$$

A. .36
B. .46
C. 260
D. .036

41)
Write $\frac{15}{16}$ as a decimal:

A. .9823
B. .9375
C. .9175
D. .9156

42)
Write $\frac{9}{24}$ as a decimal:

A. .357
B. .924
C. .375
D. .377

43)
A man bought 7.5 pounds of peaches. If each pound cost $.24, how much did the peaches cost?

A. $1.79
B. $1.80
C. $1.70
D. $2.09

44)
What is the average time for a sprinter who ran 3 races in the following times: 9.7; 10.15; 9.94?

A. 9.03
B. 9.83
C. 9.93
D. 9.90

45) "Percent" means:

A. Tens
B. Hundredths
C. Thousandths
D. Hundred-thousandths
E. None of the above

46) Which of the following can be represented as a percent (%)?

A. .125
B. 12.5
C. 1.25
D. 125.00
E. All

47) Write $37\frac{1}{2}$ % as

A. $\frac{2}{8}$
B. $\frac{3}{8}$
C. $\frac{5}{8}$
D. $\frac{2}{5}$

48) Write .1% as a

A. $\frac{1}{100}$
B. $\frac{1}{10}$
C. $\frac{10}{1000}$
D. $\frac{1}{1000}$

49) Change $1\frac{3}{4}\%$ to a decimal:

A. 1.075
B. 1.75
C. .175
D. .0175

50) Change 125% to a decimal:

A. .125
B. 12.50
C. 1.25
D. 125.00

51) What is 42.5% of 181?

A. 75.920
B. 76.925
C. 70.925
D. 50.550

52) What is $38\frac{1}{4}\%$ of 202?

A. 68.275
B. 77.265
C. 7.8275
D. 77.807

53)
90 is what percent of 60?

A. 140%
B. 70.5%
C. 150%
D. 14.1%

54)
16 is what percent of 40?

A. 44%
B. 35%
C. 30%
D. 40%

55)
2 is 12 $\frac{1}{2}$% of what number?

A. 12
B. 14
C. 16
D. 18

56)
15 is 37.5% of what number?

A. 30
B. 50
C. 45
D. 40

57) A salesman's wages are determined by how much he sells. If a salesman earned $212.50 last week but received 12% less this week, what is this week's salary?

A. $187.00
B. $180.50
C. $185.00
D. $179.50

58) A salesman is paid by the mile for the use of his car. If a salesman traveled 517.5 miles and received $.12 ¼ per mile, how much was he paid for the use of his car?

A. $59.64
B. $64.69
C. $69.64
D. $63.29

59) A textbook sells for $12.50. During a yearly sale, all books are reduced 20%. What is the sale price of the textbook?

A. $11.25
B. $10.50
C. $12.00
D. $10.00

60) A textbook sells for $12.50. During a yearly sale, the book sold for $10.00. What was the percent of the discount allowed?

A. 10%
B. 15%
C. 20%
D. 22 $\frac{1}{2}$%

61) A salesman receives 10% commission on the first $10,000 of sales. He receives 5% commission on the remaining amount. What is his commission on $18,500 of sales?

A. $1425
B. $1250
C. $1325
D. $1560

62) A boy receives 7.5% commission on every $2.00 box of candy he sells. The boy needs $15.00 to buy a baseball glove. How many boxes of candy must he sell to buy his glove?

A. 150
B. 110
C. 90
D. 100

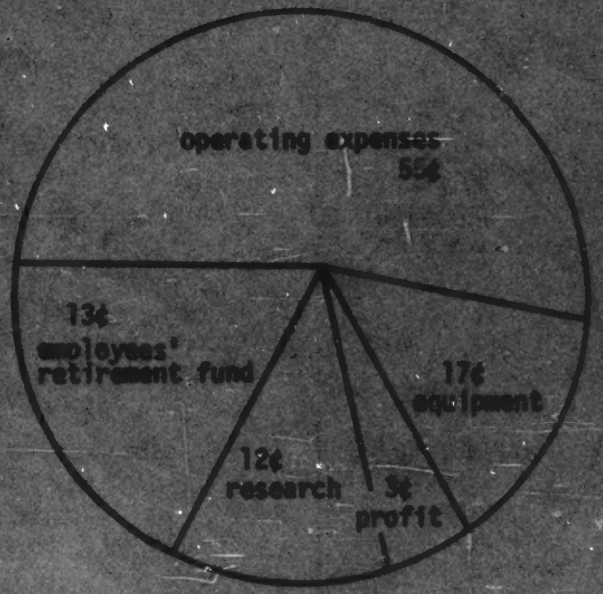
63) A man receives 2% interest from his bank four times a year. If he opened his account with $1,250.00, how much money does he have after the first quarter?

A. $1289.05
B. $1418.32
C. $1512.50
D. $1275.00

64) A man invested $5000.00 in Capitol District stock. One year later, he received a check for $187.50 interest on his investment. What was the rate of the interest he earned?

A. 4.0%
B. 3.75%
C. 3.25%
D. 2.75%

Yearly Dollar Expenditure of Hudson Power Company



7 What percent of the yearly expenditures of the Hudson Power Company was spent on equipment and research?

A. 29%
B. 19%
C. 21%
D. 23%

(2) If the total income of this company is $10,000,000.00 for last year, how much was put into the employees' retirement fund?

A. $13,000,000
B. $12,500,000
C. $1,300,500
D. $1,300,000

(3) Equipment and profit represent what fractional part of each dollar spent by this company?

A. $\frac{1}{10}$

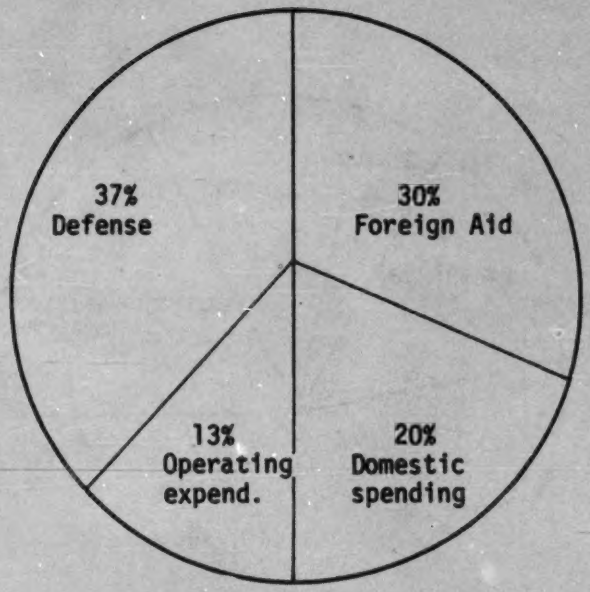
B. $\frac{1}{20}$

C. $\frac{1}{8}$

D. $\frac{2}{5}$

66)

U.S. Expenditures for 1971 (Total $200,000,000)



1)

If 1/2 of the operating expenditures were spent on employee salaries, what was the total dollar amount spent on salaries?

A. $21,300,000
B. $17,500,000
C. $15,000,000
D. $13,000.000

2)

What is the ratio of domestic spending to foreign aid?

A. 2:3
B. 2:5
C. 1:4
D. 3:2

3)

What is the total dollar amount spent on defense?

A. $73,000,000
B. $74,000,000
C. $37,505,000
D. $37,590,000

67) A ratio compares the size of _____ similar quantities?

A. 6
B. 2
C. 3
D. 4
E. None of the above

68) Which of the following best expresses a ratio?

A. $4:3 = 3:x$
B. $10:20 = 40:80$
C. $5:8$
D. $\frac{5}{20} = \frac{10}{40}$
E. None of the above

69) A building is 75 feet high. If the flagpole in front of the building is 35 feet high, then the ratio between the flagpole and the building may be expressed as:

A. $\frac{5}{17}$
B. $\frac{5}{17}$
C. $\frac{2}{8}$
D. $\frac{7}{15}$

70) The ratio between a flagpole and a building is 1:2.5 ($\frac{1}{2\frac{1}{2}}$). If the flagpole is 50 feet high, then how high is the building?

A. 120 ft.
B. 125 ft.
C. 140 ft.
D. 150 ft.

71) When _____ratio(s) are said to be equal, then they equal _____proportion(s).

A. 2
B. 1
C. 3
D. 4

72) Which of the following best expresses a proportion?

A. 4:6 = 2:3
B. $x + 6$
C. $x/6$
D. All of the above
E. None of the above

73) Solve:

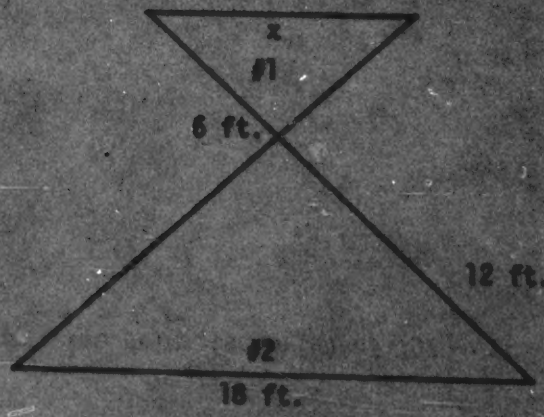
$7.5 : x = 4:8$

A. 5
B. 10
C. 15
D. 20
E. None of the above

74) If the commission on $16,000 worth of sales is $300., then what is the commission on sales totaling $25,000?

A. $467.75
B. $367.75
C. $368.75
D. $468.75

75)
Triangle #1 is similiar to triangle #2. Find the length of x.



A. 6 feet
B. 12 feet
C. 24 feet
D. 9 feet

76)
A house 75 feet tall casts a shadow 25 feet long. Find the shadow a similiar house casts when the height of the house is 37.5 feet.

A. 12.0 feet
B. 12.5 feet
C. 12.25 feet
D. 1.25 feet

77)
What are the prime numbers in the set {1, 2, 3, 4, 5, 6, 7, 8, 9}?

A. 1, 3, 5, 7, 9
B. 2, 3, 5, 7
C. 2, 5, 7, 9
D. 2, 4, 6, 8
E. None of the above

78)
Which set of numbers (A-D) is composed of prime numbers only?

A. {2, 3, 4, 5}
B. {66, 67, 69, 70}
C. {3, 5, 7, 23}
D. {47, 49, 51, 61}

79) What is (are) the prime factor(s) of 23?

A. 1 and 23
B. 1
C. 23
D. 2 and 11.5
E. None of the above

80) What is (are) the prime factor(s) of 70?

A. 70 x 1

B. 35 x 2

C. $23\frac{1}{3} \times 3$

D. 7 x 5 x 2

E. None of the above

81) Solve $\sqrt{9409}$

A. 95
B. 96.5
C. 97.0
D. 97.5
E. None of the above

82) Approximate the answer to the following problems.

$\sqrt{26} \times \sqrt{100}$

A. 51.0
B. 11.5
C. 11.0
D. 4
E. None of the above

83) $(-7) + (-13) + 20 =$

A. +40
B. -40
C. +26
D. 0
E. None of the above

84) $+ 20 + 14 + (-7) + (-21) =$

A. +62
B. -62
C. -6
D. +48
E. None of the above

85) $50 - (-25) - 20 =$

A. -55
B. +105
C. +55
D. -105
E. None of the above

86) $- 75 - (-50) + 20 =$

A. +145
B. -145
C. -5
D. +5
E. None of the above

87) $(-25) \cdot (+5) \cdot (-4) =$

A. +500
B. -500
C. +39
D. -39
E. None of the above

88) $(+400) \cdot (-1) \cdot (-2) =$

A. -403
B. +403
C. -800
D. +800
E. None of the above

89) $\dfrac{-200}{-10} =$

A. +2
B. -2
C. +20
D. -20
E. None of the above

90) $\dfrac{+25-50}{+5(-5)} =$

A. +1
B. -1
C. +3
D. -3
E. None of the above

91)
Which answer (A-E) is not an element of Set A.

Set A = {5, 10, 15, 20, 50}

A. 5
B. 10
C. 15
D. 20
E. 25

92)
The set which contains no elements and which is a subset of every set is called a(n)

A. Equivalent set
B. Overlapping set
C. Null or empty set
D. All of the above

93)
If Set A = {1, 2, 3, 4, 5} and
Set B = {4, 5, 6, 7, 8}, then A $\cap$ B equals:

A. {1, 2, 3, 4, 5, 6, 7, 8}
B. {1, 2, 3, 6, 7, 8}
C. {4, 5}
D. {ϕ}
E. None of the above

94)
Given: Set A = $\{\frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}\}$ and

Set B = $\{\frac{1}{16}, \frac{1}{32}, \frac{1}{64}, \frac{1}{128}\}$, then A$\cap$B equals:

A. $\{\frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}, \frac{1}{32}, \frac{1}{64}, \frac{1}{128}\}$

B. $\{\phi\}$

C. $\{\frac{1}{16}\}$

D. $\{\frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{32}, \frac{1}{64}, \frac{1}{128}\}$

E. None of the above

95) If Set A = {Bill, John, Pete} and Set B = {George, David, John} the AUB equals:

A. {Bill, John, Pete, George, David}
B. {John}
C. {Bill, Pete, George, David}
D. {ϕ}
E. None of the above

96) If Set A = {1, 2, 3, 4} and Set B = {3, 4, 5, 6} then,

A. AUB = {1, 2, 3, 4, 5, 6}
B. A$\cap$B = {3, 4, 5, 6}
C. ϕ = {3, 4}
D. A = B
E. None of the above

97) Which of the answers (A-D) places the meaning of the following signs in proper sequence:

(1) $<$, (2) $>$, (3) $=$, (4) $\geq$

A. greater than, less than, equal to, less than or equal to
B. less than, greater than, equal to, less than or equal to
C. greate than, less than, equal to, less than or equal to
D. less than, greater than, equal to, greater than or equal to

98) Reading these signs, left to right, ($>$, $<$, $\neq$, $\leq$), which set of answers (A-D) properly identifies them?

A. greater than, less than, not equal to, less than or equal to
B. less than, greater than, not equal to, greater than or equal to
C. greater than, less than, equal to, greater than
D. less than, greater than, equal to, less than

99)

What is the solution set of the inequality, $x - 4 > 1$. The domain of the variable is the set of signed numbers.

A. {1, 2, 3, 4, 5}
B. {6, 7, 8...}
C. {+3}
D. {-3}

100)

What is the solution set for the inequality, $x + 1 \leq 4$. The domain of the variable is the set of signed numbers.

A. $\{x|x \leq 3\}$
B. $\{x|x \geq 3\}$
C. $\{x|x \neq 3\}$
D. $\{x|x = 3\}$
E. None of the above

101)

Find the numerical value of $9y + 6t - d$ when $a = 8$, $b = 6$, $d = 3$, $x = 4$, $y = 5$, and $z = 1$.

A. -78
B. +6
C. -6
D. +78
E. None of the above

102)

Find the numerical value of $\frac{12x - 4y}{2a - 1z}$

when $x = 4$, $y = -15$, $z = +10$, and $a = +3$

A. +27
B. +3
C. -3
D. -27

103) Evaluate the expression, $4a^2 + d^2 - y^2$ when $a = 2$, $d = 3$, $x = 5$, and $y = 10$.

A. +125
B. -125
C. +75
D. -75
E. None of the above

104) Evaluate the expression $2x^2 - y^3 + 2z$ when $x = -5$, $y = 4$, and $z = 7$.

A. 128
B. 0
C. -128
D. 28
E. None of the above

105) Enclose the last 3 terms of $3x^2 - 4xy + 7y - 6$ within parentheses preceded by a minus sign.

A. $3x^2 - (+4xy - 7y + 6)$
B. $3x^2 + (+4xy + 7y + 6)$
C. $3x^2 - (-4xy + 7y - 6)$
D. $3x^2 + (+4xy - 7y + 6)$
E. None of the above

106) Enclose the last 2 terms of $4x^2 - 3y + 4$ within parentheses preceded by a minus sign.

A. $4x^2 - (3y - 4)$
B. $4x^2 - (-3y + 4)$
C. $4x^2 - (-3y - 4)$
D. $4x^2 + (+3y - 4)$
E. None of the above

107) If $V = \frac{1}{2}(LH) + \sqrt{N}$, find L when $V = -495$, $H = -20$, and $N = 25$.

A. +50
B. -59
C. +500
D. -500
E. None of the above

108) If, $V = \frac{\frac{1}{2}(LH)}{\sqrt{N - 16}}$, find V when $L = 50$, and $H = -20$ and $N = 41$.

A. +100
B. +36.5
C. -36.5
D. -100
E. None of the above

109) Which of the following formulas best represents the statement: "Acceleration (A) equals final velocity (V_f) minus initial velocity (V_i) divided by time (t)?"

A. $A = \frac{Vi - Vt}{t}$

B. $A = \frac{V_f - Vi}{t}$

C. $A = t^2 (V_f - V_i)$

D. $A = (V_f - V_i)^2 t$

E. None of the above

110) Which formula best represents the statement: "The resultant (R) is equal to the square root of the sum of the squares of the first force (F_1) and the second force (F_2).

A. $R = \sqrt{E^2} + (F_1 + F_2)$

B. $R = \sqrt{F^1 + F^2}$

C. $R = \sqrt{F_1^2 + F_2^2}$

D. $R = \sqrt{R(F_1 + F_2)}$

E. None of the above

111) A piece of rope is cut into two parts. One part is two-thirds the length of the other. Find the length of each part if the whole piece is 40 feet.

A. 10, 30
B. 12, 28
C. 24, 16
D. 17, 23
E. None of the above

112) Joe and Bill raised 125 bushels of corn. Joe raised 23 bushels more than Bill. How many bushels did Bill raise?

A. 74
B. 37
C. 47
D. 51
E. None of the above

113) $(26x^2y) + (-13x^2y)$

A. $-39x^2y$
B. $39x^2y$
C. $+13x^2y$
D. $-13x^2y$
E. None of the above

114) $(-21y^3z) - (-26y^3z$

A. $+5y^3z$
B. $-47y^3z$
C. $+47y^3z$
D. $-5y^3z^2$
E. None of the above

115) $(-3y)\ (5xy)\ (15xy^2) =$

A. $-23x^2y^4$
B. $+225x^2y^4$
C. $+25xy^4$
D. $-225x^2y^4$
E. None of the above

116) $\dfrac{(5a^2c^2d)\ (4ac^2d)}{-5a^3c^3} =$

A. $-4cd^2$
B. $+4cd^2$
C. $9a^2cd^2$
D. $-4ac^2d$
E. None of the above

117) $(3y^2 + 7 - 5y) + (9 + 4y - 5y^2) =$

A. $+8y^2 + 9y - 16$
B. $-8y^2 - 9y + 16$
C. $+2y^2 + 1y - 16$
D. $-2y^2 - 1y + 16$
E. None of the above

118) $(5x^2 + 3 - 6x) - (-6 - 9x + 2x^2) =$

A. $7x^2 - 15x - 9$
B. $3x^2 + 3x + 9$
C. $-3x^2 - 3x - 9$
D. $5x^2 - 4x + 24$
E. None of the above

119) $(3b^2 - 2c^2 - bc)(3b - 2c) =$

A. $9b^3 + 9b^2c + 4c^3 + 8bc^2$
B. $9b^3 - 9b^2c + 4c^3 - 4bc^2$
C. $9b^3 + 9b^4c^2 + 4c^3 - 8b^2c^4$
D. $9b^3 - 3b^2c + 4c^3 + 8b^2c^4$
E. None of the above

120) $3x^3 - 5y^3 + 18xy^2 - 14x^2y$ divided by $3x - 5y$

A. $x^2 - 3xy + y^2$
B. $x^2 - 2x + 4$
C. $2x^2 + 2xy + 1$
D. $x^2 + xy + y^2$
E. None of the above

121) Factor $3x^2 - 6x - 24$ complet

A. $3(x^2 - 2x - 8)$
B. $3(x + 4)(x + 2)$
C. $3(x - 4)(x - 2)$
D. $3(x - 4)(x + 2)$
E. None of the above

122) Factor $5x^2 - 45$ completely

A. $(x + 3)(x - 3)$
B. $5(x + 3)(x - 3)$
C. $5(x - 3)(x - 3)$
D. $5(x + 3)(x + 3)$
E. None of the above

123) Factor $x^2 - 9$

A. $x(x^2 - 9)$
B. $(x-3)\ (x-3)$
C. $(x+3)\ (x+3)$
D. $(x-3)\ (x+3)$
E. None of the above

124) Factor $Z^2 - \frac{1}{100}$

A. $(Z - \frac{1}{10})\quad (Z - \frac{1}{10})$

B. $(Z - \frac{1}{10})\quad (Z + \frac{1}{10})$

C. $Z(Z - \frac{1}{100})$

D. $Z^2(Z + \frac{1}{10})$

E. None of the above

125) Solve the following for x:

$x^2 - 7x = -10$

A. $x = 7,\ x = 10$
B. $x = 2,\ x = 5$
C. $x = -7,\ x = -10$
D. $x = +7,\ x = -10$
E. None of the above

126) In the following problem,

$x^2 - 3x = -2$

A. $x = -2,\ x = -1$
B. $x = 2,\ x = 1$
C. $x = -2,\ x = 1$
D. $x = 2,\ x = -1$
E. None of the above

127) In the following problem, solve for x and y.

$$4x - y = 10$$
$$2x + 3y = 12$$

A. $x = -3,\ y = -2$
B. $x = -3,\ y = 2$
C. $x = 3,\ y = -2$
D. $x = 3,\ y = 2$
E. None of the above

128) In the following problem, solve for x and y.

$$3x - 4y = 2$$
$$2(7-y) = x$$

A. $x = -6,\ y = -4$
B. $x = +6,\ y = -4$
C. $x = -6,\ y = -6$
D. $x = 6,\ y = 4$
E. None of the above

129) Which of the following set of answers (A-E) best describes the types of measures:

4½ feet, 8½ quarts, 2000 pounds, 87°?

A. Length, Weight, Degree, Time
B. Length, Liquid, Degree, Time
C. Length, Liquid, Weight, Angle
D. All of the above
E. None of the above

130) In reference to quarts, which of the following answers best describes possible uses?

A. Length Measure, Dry Measure
B. Weight Measure, Liquid Measure
C. Dry Measure, Liquid Measure
D. All of the above
E. None of the above

131) Subtract

$$\begin{array}{rrr} 57^\circ & & 15'' \\ -\ 23^\circ & 27' & 42'' \\ \hline \end{array}$$

A. 34° 27' 27"
B. 33° 27' 27"
C. 33° 32' 33"
D. 80° 27' 57"
E. None of the above

132) Multiply

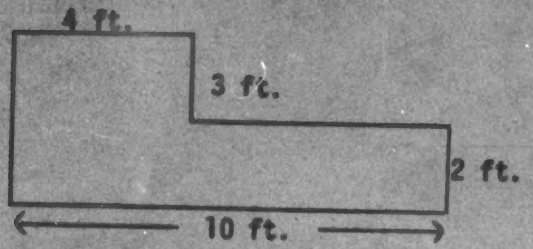
$$\begin{array}{rrr} 5 \text{ gal.} & 2 \text{ qt.} & 1 \text{ pt.} \\ & & \times\ 7 \\ \hline \end{array}$$

A. 39 gal., 1 qt., 1 pt.
B. 35 gal., 47 qt., 4 pt.
C. 45 gal., 1 pt.
D. Not possible
E. None of the above

133) What is the area of a circle whose diameter is 15 feet? Use 3.14 for π.

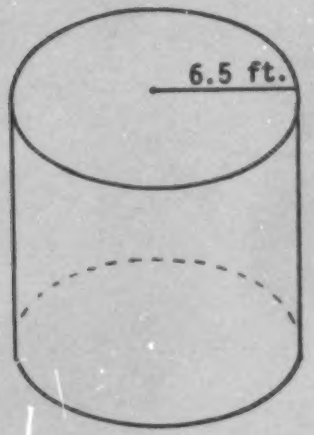
A. 175 sq. ft.
B. 176.6 sq. ft.
C. 180 sq. ft.
D. 185 sq. ft.
E. None of the above

134) Find the area of the entire figure below.



A. 240 sq. feet
B. 32 sq. feet
C. 60 sq. feet
D. 120 sq. feet
E. None of the above

135) Find the volume of the right circular cylinder using the formula $V = \Pi r^2 H$

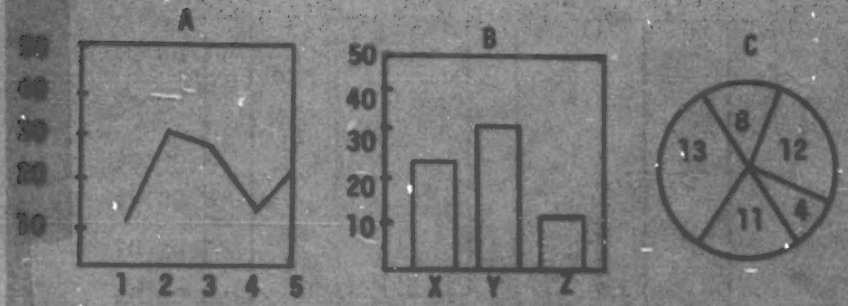


A. 78 cubic feet
B. 1592 cubic feet
C. 245 cubic feet
D. 6368 cubic feet
E. None of the above

136) Find the volume of a rectangular solid whose length = 10 feet, width = 12 feet and depth = 6.5 feet.

A. 28.5 cubic feet
B. 780 cubic feet
C. 126.5 cubic feet
D. 78 square feet
E. None of the above

137) Which answer (A-D) places the following graphs in proper order, reading from left to right?



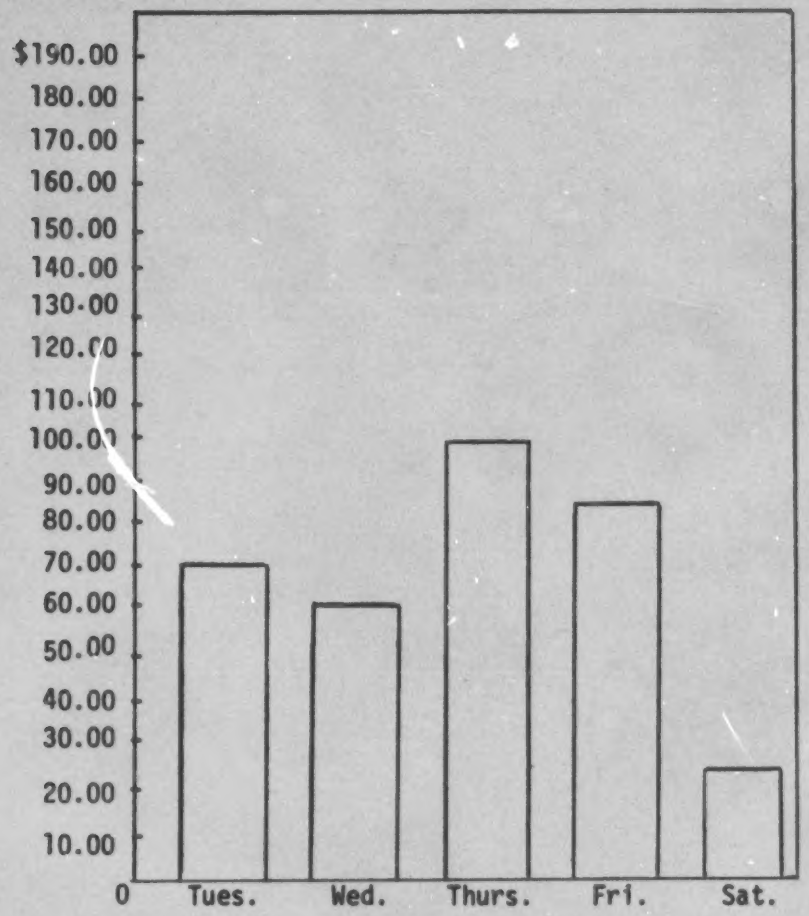
A. Line graphs, circle graph, bar graph
B. Bar graph, picture graph, circle graph
C. Line graph, bar graph, circle graph
D. Line graph, picture graph, circle graph

138) The total percent in any circle graph should be

A. 360° x 100%
B. 360°
C. 100%
D. All of the above
E. None of the above

139)

The following graph shows the receipts for one working week of Joe's Barber Shop.



(1) What is the average daily amount that Joe made during the week graphed above?

A) $64.00 B) $68.00 C) $60.00 D) None of the above

(2) What is the ratio between the lowest and highest daily amounts of Joe's earnings during this week?

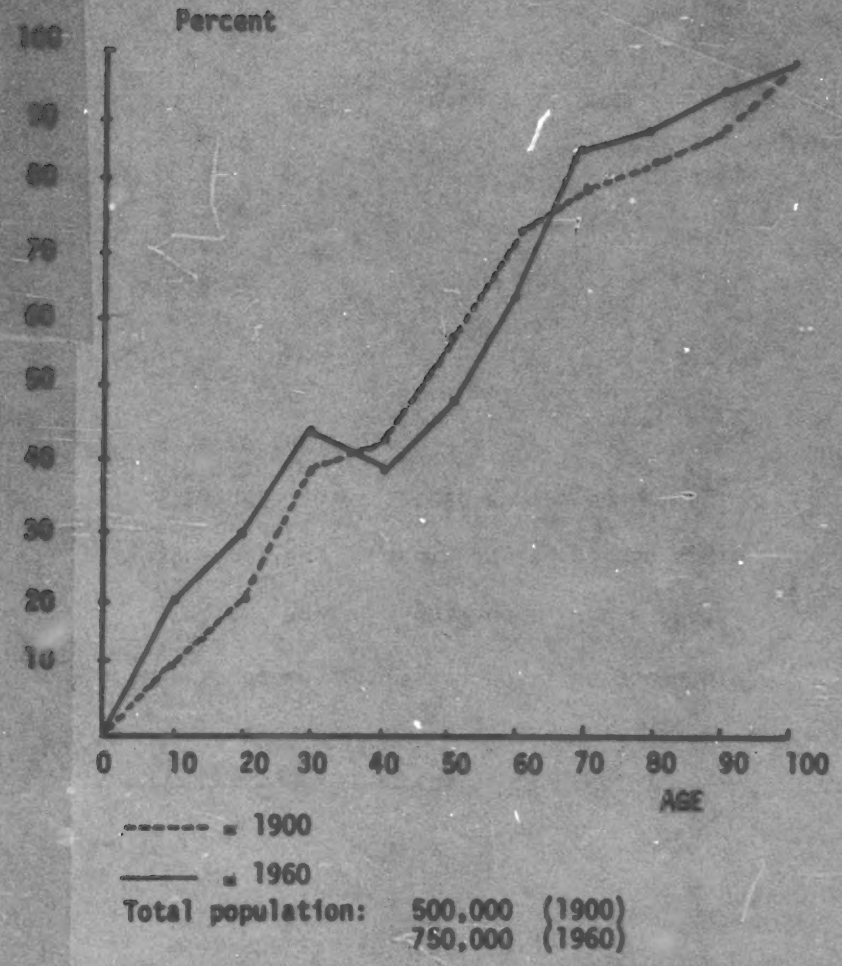
A) 2.5:100 B) 25:10 C) 1:4 D) None of the above

(3) If Joe pays 7% income tax, how much tax will Joe pay for this week?

A) $2.38 B) $238.00 C) $23.80 D) None of the above

140)

The following chart shows the cumulative breakdown of the population of St. Louis for 1900 and 1960.



Total population: 500,000 (1900)
750,000 (1960)

(1) What percent of the population of St. Louis was under 40 years of age in 1900?

A) 40% B) 45% C) 55% D) None of the above

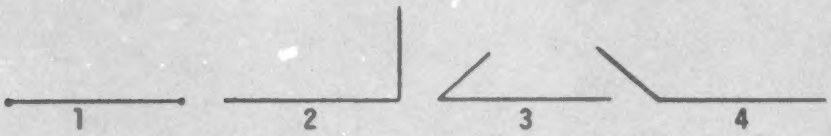
(2) How many people in St. Louis were under 20 years of age in 1960?

A) 225,000 B) 150,000 C) 250,000 D) None of the above

(3) Did the percentage of the total population of St. Louis under 50 years of age increase or decrease between 1900 and 1960?

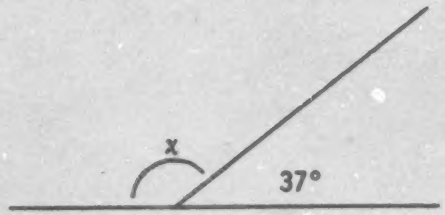
A) Increase B) Decrease C) No change D) Cannot be determined

141) Which of the following answers (A-E) corresponds with the sequence of angles 1-4?



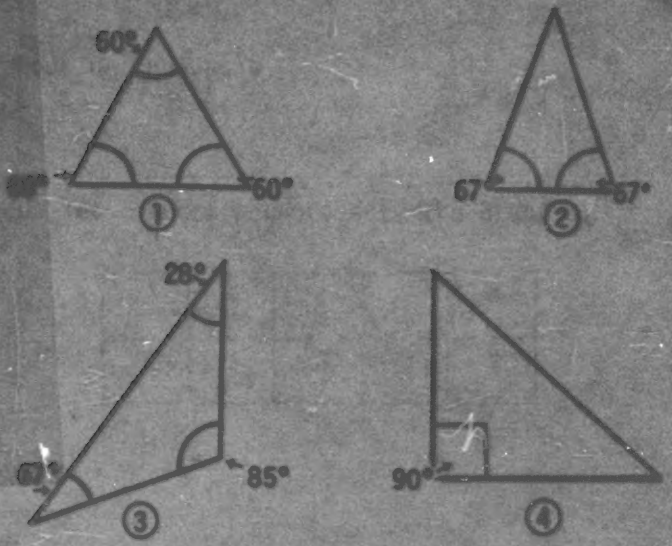
A. Straight angle, right angle, obtuse angle, acute angle
B. Straight angle, right angle, acute angle, obtuse angle
C. Straight angle, acute angle, obtuse angle, right angle
D. Straight angle, obtuse angle, acute angle, right angle
E. None of the above

142) Define angle x and determine its value



A. Obtuse 173°
B. Obtuse 143°
C. Acute 53°
D. Obtuse 153°
E. None of the above

Which of the answers (A-E) correctly labels the sequence of triangles 1-4?



A. Isosceles, scalene, equilateral, right triangle
B. Scalene, isosceles, equilateral, right triangle
C. Isosceles, equilateral, scalene, right triangle
D. Equilateral, isosceles, scalene, right triangle

144)

The isosceles triangle has two sides and two angles equal. The scalene triangle has _____ sides and _____ angles equal.

A. 3
B. 2
C. 1
D. 0
E. None of the above

145)

Solve for x.

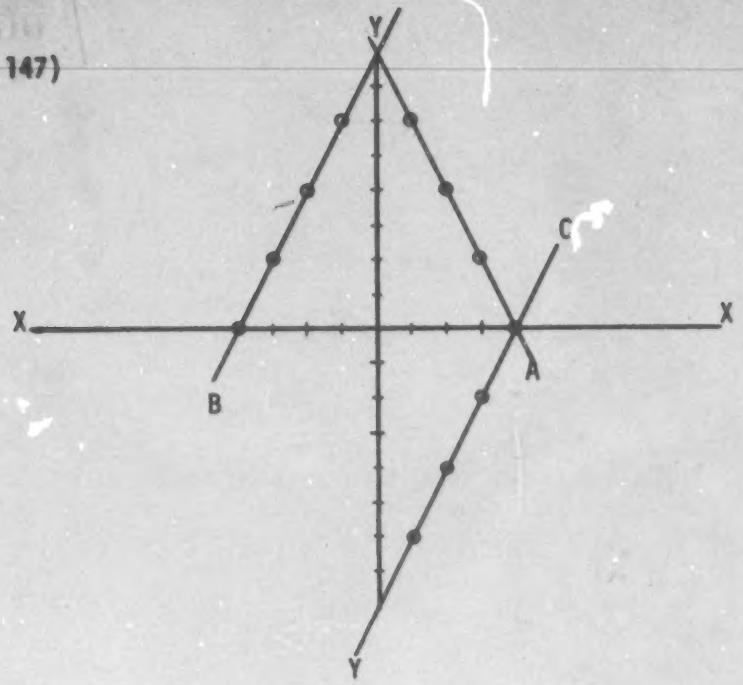
A. 10 feet
B. 12 feet
C. 15 feet
D. 20 feet
E. None of the above

146)

Find the area of the following rectangle.

A. 22 sq. feet
B. 60 sq. feet
C. 48 sq. feet
D. Not possible
E. None of the above

147)



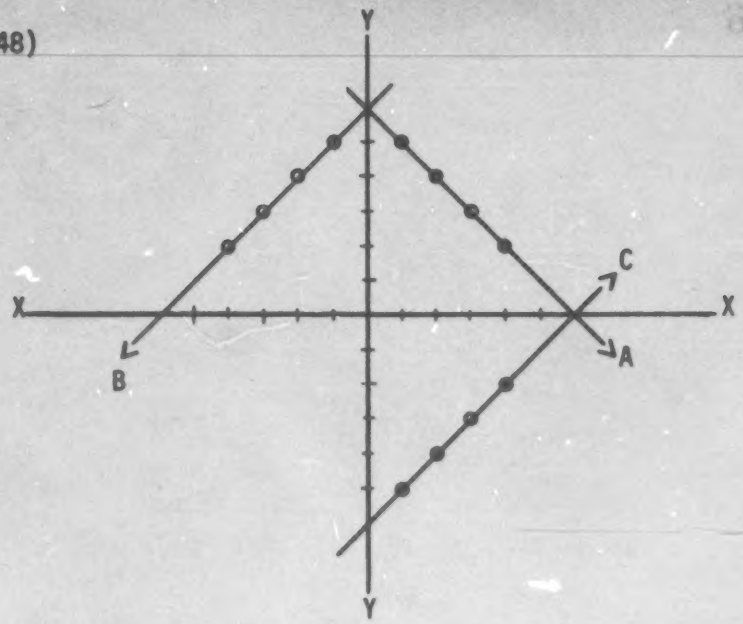
Graph $2x + y = 8$.

x	1	2	3	4
y	6	4	2	0

Which line correctly represents the graph of $2x + y = 8$?

A. A
B. B
C. C
D. None of the above

148)



Graph the following equation + $2x + 2y = 12$.

x	1	2	3	4
y	5	4	3	2

Which of the following lines represents the above equation?

A. A
B. B
C. C
D. None of the above

END